Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	WT Docket No. 02-46
Report on Technical and Operational	)	(DA 02-2666)
Wireless E911 Issues	)	

COMMENTS OF NENA, APCO AND NASNA

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SUMMARY

The mobile nature of wireless calling, Congressional endorsement of 9-1-1 as the universal number to call in emergencies and the tragic events of September 11, 2001 and afterward have given a national importance and scope to a public safety concept that was inspired and implemented locally more than three decades ago. The strong federal interest in 9-1-1 systems should acknowledge and build upon this tradition of inspired localism. As a practical matter in today's economy, new ideas should come equipped with means of paying for their implementation. With this history in mind, there is merit to the Hatfield Report's suggestions of a National 9-1-1 Program Office, an FCC advisory committee or acceptable surrogate on technical complexities of Phase II and beyond, increased FCC oversight of wireless E9-1-1 implementation, and improved coordination among interested federal and state agencies.

The Hatfield Report affirms much of what public safety associations have been doing to keep 9-1-1 systems effective, affordable and relevant. These include Project LOCATE as an incubator of Phase II implementations, NENA's "SWAT" program to educate and assist PSAPs most in need of technical and financial aid, new mechanisms to receive and use voluntary dollar contributions to the effort and national status reporting and clearinghouse activities.

Now that wireless carriers, for the most part, have acknowledged the technical feasibility of Phase II, the burden is on PSAPs and those LECs that serve as intermediaries in connecting wireless 9-1-1 calls to reach a simultaneous state of readiness allowing them to receive and use advanced location information from the carriers. At the same time, the wireless carriers have serious waiver bargains with the FCC that are not yet fulfilled and must meet pressing benchmarks.

Three decades ago, there was a single, essentially unified wire telephone system and one way of reaching public safety answering points. Today, wireless emergency calling has created multiple networks in what must strive to remain one system, and these new networks account for 20 to 60% or more of the calls to 9-1-1. Computers using voice over internet protocols and automatic crash notification systems forwarding data alone are adding steadily to the paths by which help may be summoned. In the words of the Hatfield Report, the challenge is "to prioritize the future evolution of wireline and wireless E911 in such a way that short term and long term priorities are properly balanced."

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The National Emergency Number Association ("NENA"), the Association of Public-

Safety Communications Officials-International, Inc. ("APCO") and the National Association of

State Nine One One Administrators ("NASNA") hereby respond to the Commission's invitation

to comment on the referenced Report of its consultant, Dale N. Hatfield.[1] The conclusions and

recommendations of the Hatfield Report are prefaced (at ii) by three "preliminary comments"

from the author:

❑ Recent legislation, coupled with the events of September 11, 2001, "emphasize the importance of E911 in general, and wireless E911 in particular, to the safety of life and property and homeland security." That 9-1-1 callers be located automatically is "critical to those emergency services."

❑ "There is no longer any real disagreement regarding the technical feasibility of providing wireless E911 to the approximately 130 million wireless subscribers in the United States. The challenge now is to successfully complete the implementation of wireless E911 . . ."

❑ "[T]he existing <u>wireline</u> E911 infrastructure, while generally reliable, is seriously antiquated. . . .Yet it is a critical building block in the implementation of wireless E911."

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[1] Public Notice, DA 02-2666, released October 16, 2002. The Report is titled "Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services," hereafter "Hatfield Report."

The first of these comments speaks to why public safety organizations, nearly 10 years ago, approached the FCC in the context of a rulemaking to introduce Personal Communications Services ("PCS") in the 2 GHz region of the spectrum as a complement and competitor to analog cellular service at 800 MHz. The Texas Advisory Commission on State Emergency Communications first sought reconsideration of one of the PCS rulemaking orders, asking that new PCS carriers be required to pass callback numbers and locations of 9-1-1 callers on their systems, and route the calls selectively to the Public Safety Answering Points ("PSAPs") designated to respond and dispatch assistance.[2]

Recognizing the applicability of the request to other wireless providers such as conventional cellular carriers, the Commission opened CC Docket 94-102 to take comments. The agency explained:

> We believe that Commission action is necessary to ensure that, over time, mobile radio service users on the public switched telephone network have the same level of access to 911 emergency services as wireline callers. 9 FCC Rcd at ¶37.

What was true in that year (1994) for an estimated 24 million subscribers is multiplied in importance now for some 130 million subscribers and the PSAPs who serve them.[3]

Agreement as to the feasibility of wireless E9-1-1 has not been easy to come by. Despite CTIA's leading role in forging with public safety groups the "Consensus" that became the foundation of initial rules,[4] many of the association's wireless carrier members and cellular equipment manufacturers remained dubious or opposed.[5] We believe the initially negative

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[2] Notice of Proposed Rulemaking, CC Docket 94-102, 9 FCC Rcd 6170 (1994), ¶¶2, 32-33.

[3] http://www.wow-com.com/images/survey/chart8full.gifhttp:

[4] Report and Order, 11 FCC Rcd 18676 (1996), ¶¶21-23.

[5] Memorandum Opinion and Order, on reconsideration, 12 FCC Rcd 22665 (1997), ¶2 and Appendix A.

attitudes of wireless carriers and manufacturers continued for several years after adoption of the

rules and contributed to the near-universal requests for waivers and time extensions by carriers

large and small. As we stated recently in an early response to the Hatfield Report: "Wishing the

period of disputation had been shorter, we nevertheless look forward to successful completion of

the implementation."[6]

NENA, APCO and NASNA generally agree with the third of the Hatfield Report's

preliminary comments. The wireline network is critical to 9-1-1 emergency calling as it exists

today and this network is usually reliable. But there is no escaping the age of many of these

backbone facilities. Still, we should not assume one modernizing solution will fit all needs.[7] For

example, both Central Automatic Message Accounting ("CAMA") and Signaling System 7

("SS7") are methods created for other purposes which have been put to good use in emergency

calling. Just as telephone number changes have highlighted CAMA's limitations, so we should

recognize that SS7 was developed for call set-up, not data transport. Ultimately, the emergency

telecommunications process must use a protocol designed for constant voice and data processing

-- such as Internet Protocol ("IP"). We discuss further below NENA's "Future Path Plan" which

has anticipated many of the suggestions in the Hatfield Report.

As a preliminary comment of our own, we are concerned by the absence of any

significant discussion in the Report of wireless carriers and the critical role they play in making

wireless E9-1-1 a reality. After all, it is the wireless carriers who are uniquely subject to the

FCC's wireless E9-1-1 rules, and thus are the entities with the ultimate legal responsibility to

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[6] Joint Statement of NENA, APCO and NASNA, October 23, 2002. For further information, see www.nena9-1-1.org.

[7] "Uncertainty surrounding the willingness and ability of [PSAPs] to pay for wireless E911" (Report, ii-iii) is a fact of life in a "tax"-averse world and must be met with patient persuasion.

deploy E9-1-1. Perhaps the silence of the Report on what we criticized repeatedly as foot-dragging by both wireless carriers and handset manufacturers is explained by the following:

> In accordance with the Public Notice, emphasis was placed upon those obstacles that remained rather than on rehashing issues that may have arisen in the past but are no longer a major impediment. (Report, 2)[8]

The point, however, is that we need to learn from history, and make sure we don't repeat it. Some wireless carriers have made great strides in their efforts to deploy E9-1-1 capability. Yet, as reflected in recent FCC enforcement actions, some carriers were not, until recently, proceeding expeditiously. Many carriers tend to be reactive to FCC requirements, doing only what is required by rule, and not what is necessary to get the job done as quickly as possible. Other carriers have clung to questionable location technologies, which still threatens to delay deployment of accurate Phase II capability. In final analysis, carriers need to be leaders, not followers in this effort.

I. The Strong Federal Interest in 911 Systems Should Acknowledge and Build Upon a Tradition of Inspired Localism.

When Congress enacted the Wireless Communications and Public Safety Act of 1999, it was careful to instruct the FCC to "encourage and support," rather than to dictate or take over, "efforts by States to deploy comprehensive end-to-end emergency communications infrastructure

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[8] One widely-read trade paper misread the Report's deliberate refusal to rehash the past as exculpation: "Hatfield blames everyone but carriers, vendors for E911 delay." *RCR Wireless News*, October 16, 2002. We believe the past was prologue to some of the implementation backlogs we see today. At a minimum, the LEC and PSAP readiness problems that are now identified as principal sticking points would have been discovered earlier, but for wireless carrier and manufacturer delays in the first instance. We think it is notably disappointing that the three largest handset manufacturers were beaten badly out of the gate by smaller Asian manufacturers. We wish the Hatfield Report had examined why.

and programs."[9] "Nothing in this subsection," the new law stated, "shall be construed to authorize or require the Commission to impose obligations or costs on any person." We take this as a caveat against "unfunded mandates" and suggest respectfully that new programs come complete with feasible sources of funding.

A.   National 9-1-1 Program Office

The Hatfield Report recommends creation of a National 9-1-1 Program Office, perhaps in the proposed Department of Homeland Security. We agree on the need for a strong Executive Branch focus on 9-1-1 services. As described in the Hatfield Report, the events of September 11, 2001, and the subsequent attention to homeland security, made clear that 9-1-1 capability is an integral part of our nation's critical emergency communications infrastructure. A National 9-1-1 Program Office is necessary to gather vital information and to provide guidance, education and support for our nation's PSAPs and other interested parties. In particular, a National 9-1-1 Program Office could provide a powerful vehicle for obtaining and distributing funding to assist PSAPs in the daunting task of adapting 9-1-1 to new communications technologies.

While we support the establishment of a National 9-1-1 Program Office, and agree that ultimately the new Department of Homeland Security may be an appropriate location for it, we are concerned about the possible delay in establishing and organizing this new Department.[10] Thus it may be appropriate to create the Program Office within an existing agency, and move it to the Department of Homeland Security sometime thereafter. A central 9-1-1 advocate within the federal government would help immediately to advance national leadership, coordination and

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[9] P.L. 106-81, Section 3(b), codified at 47 U.S.C.§615.

[10] Our concern would be mooted, of course, if the President succeeds in his determination that Congress adopt the necessary legislation when it returns following the national elections. Still, the legislation will not produce immediately or automatically a functioning new executive department.

comprehensive information gathering to support a reliable and seamless emergency calling system. Finally, we want to emphasize that the National 9-1-1 Program Office should not diminish in any way the FCC's current authority to establish and enforce rules governing 9-1-1 deployment by entities subject to its jurisdiction, but rather help fashion policies and procedures.

B. FCC Advisory Committee

The Hatfield Report includes a suggestion that the Commission establish an Advisory Committee to assist it in addressing the complex technical issues confronting wireless E9-1-1 deployment. While we agree that the Commission might have benefited from such assistance in fashioning the current rules, establishing an advisory committee at this late date might risk unnecessary delay.

Advisory committees, especially those subject to the Federal Advisory Committee Act ("FACA"), take considerable time to establish, and require participants to devote substantial amounts of scarce time and resources. By their nature, advisory committees move slowly, which may be acceptable in the early stages of a new regulatory regime. However, at this point in the history of wireless E9-1-1, the Commission needs more rapid advice as issues are more likely to be related to implementation and enforcement than to a need for new rules.

An advisory committee may well be appropriate, however, as parties move forward in attempting to implement E9-1-1 for "non-traditional" devices, systems and networks such as 911 calls using Personal Digital Assistants ("PDAs"), voice over Internet Protocol ("VOIP") and vehicular "telematics." In those situations, the problems and the solutions are still being explored, and the technologies are nascent. Thus, now may be the best time to initiate an advisory committee to assist the Commission and all interested parties.

C.   Increased FCC Oversight of Wireless E9-1-1 Implementation

The Commission has already proven the value of this recommendation from the Report. Waiver grants have been carefully and comprehensively drawn in great detail to explain their requirements to subject wireless carriers.[11] Referrals to the Enforcement Bureau have been used sparingly but firmly to set achievable benchmarks for future carrier performance. Even without the same plenary jurisdiction over 9-1-1 equipment makers as obtains for wireless carriers, the FCC has effectively brought manufacturers into the implementation process by refusing to countenance delays in delivery as automatic excuses from rule or waiver compliance.

Through an omission regrettable in hindsight, those incumbent local exchange carriers ("ILECs") who function as critical intermediaries in forwarding wireless E9-1-1 calls to PSAPs were not brought early enough into the creation of rules and the subsequent implementation process. In part, the complications are jurisdictional, given state precedence in the many essentially local or intrastate aspects of emergency calling. Even now, the wireless E9-1-1 regulations in Part 20 are not directed at ILECs or their competitors, the CLECs.

Nevertheless, the FCC policy apparatus has not hesitated to intervene when the occasion demands, as in the recent impasse over Phase II implementation in Greenville-Spartanburg, South Carolina.[12] Moreover, the staff and Commissioners have made clear their low tolerance for ostensibly procedural obstacles to wireless E9-1-1 deployment, such as the absence of state

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[11] The requirement of quarterly reporting about progress toward waiver benchmarks, and the compulsory service of these reports on national 9-1-1 authorities and counsel, effectively and properly enlist the public safety community in an oversight role.

[12] Letter of Wireless Telecommunications Bureau Chief Thomas Sugrue to Kathleen Levitz (BellSouth), Luisa Lancetti (Sprint PCS) and John Scott (Verizon Wireless), October 28, 2002.

approval of new tariffs tailored to emerging Phase II costs and issues.[13] Finally, the Enforcement

Bureau has remained open to, and dealt expeditiously with, 9-1-1-based complaints -- often

using its so-called "fast track" process.[14]

To some extent, the closeness with which the FCC oversees the wireless E9-1-1

implementation process might actually be relaxed if certain critical decisions could be made

more quickly. The seminal *King County* and *City of Richardson* orders were a long time coming,

and the latter is still subject to year-old reconsideration petitions from wireless carriers.

Admittedly, the Phase II implementations -- where standards lately arise more often from *de*

facto adjustments than formal process -- must seem at times moving targets. Which is why the

Commission may have to rely more in the future on new vehicles for wireless

industry/LEC/public safety collaboration, such as the ATIS-NENA co-convened Emergency

Services Interconnection Forum ("ESIF") mentioned in the Hatfield Report.

D.   More and Better Coordination with Other Federal and State Agencies

The task of keeping 9-1-1 up to speed with technology and the emerging focus on

homeland security is too large for any single agency. The Report takes note of safety and

security initiatives at the Department of Transportation ("DOT"), the Federal Emergency

Management Agency ("FEMA") and the Department of Justice ("DOJ"), as well as the proposed

Homeland Security Department. However, because the author finds "fragmented" the efforts of

the FCC and the extant agencies to work together on emergency calling and response and related

missions, he commends a National 9-1-1 Program Office.

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[13] *See, e.g.* Letter of October 28, 2002 from Jonathan J. Boynton of SBC Communications to
FCC Secretary, explaining that , pending resolution of litigation over an SBC tariff in Michigan,
the company would be offering in Michigan, as it has in Illinois, an "interim" contract or tariff to
allow Phase II implementation to proceed.

[14] Section 1.730 of the Rules.

Depending on the shape of the homeland security agency, some of the entities with which the FCC ought to stay in touch may be combined in that new location, presumably easing the coordination problem. Coordinating with 50 states, as Congress has encouraged the FCC to undertake in the 1999 legislation, is a more complicated matter. Congress expressed the hope that the Governor's office could provide that single point, but some states already had established separate offices or commissions and others chose to stick with historically dispersed authority in counties, regions, special districts or even single local governments. As we have seen, the state regulatory commissions are also involved in 9-1-1 through their oversight of LECs.

Plainly, 9-1-1 structures are various and will continue to differ. But this diversity need not be defeating. In most states, there is nothing to prohibit counties or districts or regions from coming together informally in a common mission. Indeed, we are seeing this as states address homeland security issues and create single points of contact. In all likelihood, a National 9-1-1 Program Office would catalyze formation of state single points of contact, if only for ease and cost-effectiveness of state representation at the federal level.

II. Several of the Report's Recommendations Affirm Work in Progress at the National Public Safety Associations.

We appreciate the several opportunities given NENA, APCO and NASNA to meet, together and separately, with Dale Hatfield and Leon Jackler as they gathered information for the Report. Several of the public safety associations' initiatives are mentioned in the Report, and this presents an opportunity to fill out the discussion.

A.   Project LOCATE

Project LOCATE (Locate Our Citizens At Times of Emergency) was created by APCO in 2000, initially to encourage PSAPs to be proactive in requesting Phase II service, and to help gather and share information with other PSAPs. A model community was located for every state (except Hawaii), and the District of Columbia. These models ranged in size from small rural PSAPs to large metropolitan PSAPs to entire states. Approximately 30 model communities requested Phase II in time to meet the FCC's original October 1, 2001, deadline, and many others have made their Phase II requests since that time.

The Project LOCATE team offered technical assistance to the model communities (and all PSAPs though a web site), and provided them sample letters and information on how to file their requests. The model communities have been periodically asked to complete questionnaires identifying the carriers involved in their E9-1-1 implementations, and any challenges they have encountered. The Project LOCATE team has successfully helped many PSAPs overcome these challenges, while also opening lines of communication between PSAPs and wireless carriers. The information collected by Project LOCATE has been used to spot recurring issues that require attention on a national basis, and this information has been shared with other agencies and wireless carriers, leading to the removal of many barriers to E9-1-1 deployment.

The Project LOCATE team has also taken an active role in all wireless activities, including efforts with APCO, NENA, NASNA, DOT, and ESIF. Team members participate on all major forums regarding wireless 9-1-1, represent the public safety view on these forums, and glean information that is in turn shared with the model communities (and all of public safety) through periodic updates. This project has been one of the more highly visible actions of public safety on wireless 9-1-1 issues.

B.   Strategic Wireless Action Teams ("SWAT")

Although this NENA initiative post-dated the information-gathering phase of the Hatfield inquiry, its kickoff meeting in September 2002 was the culmination of a wish list for on-the-ground assistance to PSAPs implementing Phase I and Phase II that had accumulated since the wireless E9-1-1 rules were first issued in 1996. By happy coincidence, SWAT aims at three chief causes of what the Report (at 29) terms "PSAP fatigue:" over-reliance on volunteers, lack of funding and disparities in knowledge and resources. A summary of the SWAT initiative is attached as Exhibit A. SWAT is funded through the generosity of Nextel Communications, and will continue to look for additional private and public resources.

C.   Public Safety Foundation of America

The Public Safety Foundation of America is a new foundation formed by APCO to receive and distribute grant monies for public safety agencies.   The Foundation received a substantial initial donation from Nextel, consistent with the financial pledge contained in its Phase II waiver request.   The Foundation continues to seek additional donations, and is now receiving its first round of grant applications, with awards expected to begin shortly. The Foundation anticipates making awards for large scale projects designed to develop information and encourage statewide implementations, as well as projects designed to help individual PSAPs. Priority is given to projects that will benefit large segments of the public safety community, and those that seek funding for planning and coordination, PSAP equipment and technology, strategic deployment initiatives, and education.

The Foundation is driven by an advisory group representing the following organizations: National Association of Counties, International Association of Chiefs of Police, International Association of Fire Chiefs, National League of Cities, National Association of State EMS Directors, National Governors' Association, NENA and APCO.

D.   A National Clearinghouse

"With regard to the need for increased information exchange among the stakeholders, I recommend that a national level clearinghouse be established to collect, store and disseminate status information about the rollout of wireless E911." (Hatfield Report, 25) We believe such an entity is well on the way to establishment through existing public-private partnerships, but could be advanced through creation of a National 9-1-1 Program Office. Two products of a NENA contract with DOT, the "NENA/USDOT Clearinghouse" and the "Wireless Deployment Profile," may be viewed at http://dot.nena.org. (Hatfield Report, 30, n.47) APCO and NASNA also are participants in the partnership. An early effort at 9-1-1 national profiling was NENA's "Report Card to the Nation" of September, 2001.[15]

The newly comprehensive "PSAP Registry" is described at http://www.nena9-1-1.org/PSAPs/index.htm, and represents a collaborative effort between Intrado and NENA. As explained on the NENA web link:

> The primary goal of the Registry is to ensure the accuracy, timeliness and efficiency of the information that is passed among PSAPs, private call centers and other stakeholders in emergency situations. Because of the sensitive nature of the contact information that will be contained within the NENA PSAP Registry, access to the Registry will be secure and password-protected.[16]

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[15] Accessible at http://www.nena9-1-1.org/initiatives/rcn/rcn.htm.

[16] The web link explains further the limitations on Registry access: "The information available through the online Registry will . . .only be available to those organizations in the emergency response and services field (unless specifically permitted by the members of the Registry). Every subscriber to the NENA PSAP Registry will be thoroughly reviewed by NENA staff for authenticity and intended use of the data. To aid in the facilitation of the review process, NENA

Connecting and enhancing initiatives such as these in a National 9-1-1 Program Office is not only sound as public policy but practical for 9-1-1 universal deployment.

III.   Striving for Simultaneous Readiness

Elsewhere in these comments, we maintain that until recently, it was wireless carrier readiness for Phase II that was most at issue. The question remains only partly resolved as many carriers work their way through incremental waiver deadlines and quarterly reports describing their progress. The Hatfield Report chose not to look back to wireless carrier performance in the period 1996-2001 but to focus on the current status of PSAP and LEC readiness for wireless E9-1-1 implementation. Now that they are beginning to come up to speed, wireless carriers have good cause to expect 9-1-1 authorities and LECs to be prepared to implement at or near the same time the carriers are ready.

A.   <u>PSAP Readiness</u>

The November 2002 quarterly waiver reports of wireless carriers are replete with examples of PSAPs for whom the chief obstacles identified in the Hatfield Report -- lack of funding and human resources to meet the sheer complexity of the Phase II tasks -- have caused suspension of, or delays in beginning, the implementation process. A number of the reports speak of withdrawals of PSAP requests for Phase II service.

The nature of the Phase II challenges, and the ability of each PSAP to respond to those challenges, varies greatly across the nation. Some PSAPs are deeply involved in the process, and are ready today to receive and process Phase II data. However, others are further behind and need help to face the technical, operational, regulatory, and funding challenges standing in their

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will be working with the public safety community and private call centers to develop private call center certification criteria."

way. As noted earlier, the Hatfield Report describes this situation as "PSAP fatigue," a term that suggests, perhaps unintentionally, a weariness with the process and lack of commitment to proceed. We prefer to view the issue in a more positive light, and consider PSAP readiness to be a series of challenges, with the vast majority of PSAPs anxious to move forward, but needing help to overcome those challenges.

We join with Dale Hatfield in seeking to reduce what he calls "false positives" in PSAP readiness -- 9-1-1 authorities who thought they were prepared for Phase II but are not. Project LOCATE, the SWAT initiative, the DOT-funded "Wireless Deployment Profile" mentioned above, and certain ESIF studies all are aimed at helping the PSAPs, the LECs and the wireless carriers arrive at a common definition of readiness for deployment. The Hatfield Report's first recommendation is for continuation of these voluntary efforts.[17] Only if "false positives" persist in large numbers should "independent third-part certification" be considered. (Report, 32)

At the same time, we are also very concerned with what might be referred to as "false negatives," whereby a wireless carrier makes an unsupported or incorrect claim that a PSAP is not "Phase II ready." Therefore, it is important for the Commission to establish procedures that discourage such unsupported claims, and provide PSAPs ample opportunities to respond and refute "false negatives."

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[17] AT&T Wireless says it has hired Intrado as a PSAP readiness reviewer. (November quarterly report, 7) ESIF study of Issue No. 12, titled "PSAP documentation to satisfy the Richardson Order verification requirement," has produced a "Wireless E9-1-1 Phase II Readiness Checklist" which has been formally adopted by ESIF and will be placed on the record here when available.

B.   LEC Readiness

The efforts of the Commission to apply the *King County* and *City of Richardson* "demarcation point" and Phase II readiness tests have been discussed earlier and need not be repeated at greater length. Suffice it to say that we believe there are ways -- gradually, if grudgingly, accepted by certain ILECs -- to move forward with Phase II implementation even if specific tariff and other cost recovery details remain to be perfected. However, the Hatfield Report sounds a note of caution about the ultimate prices and terms in ILEC arrangements with PSAPs and wireless carriers:

> I recommend that the Commission work closely with the
> individual state public utility commissions and their nationwide
> organization, the National Association of Regulatory Utility
> Commissioners ("NARUC") to alert them to the importance of
> the pricing issue to the rollout of wireless E911 on a nationwide
> basis. (Report, 34)

Indeed, we think it is fair to assume that if ILEC prices and terms are not affordable and fair to PSAPs and wireless carriers, ways will be found to deliver wireless E9-1-1 that reduce or eliminate the present degree of reliance on intermediary services and facilities of the wire telephone companies.[18] While we often seem preoccupied with the implementation struggles of the moment -- complicated by the limitations of present technology and infrastructure -- all of us must keep our eyes on future delivery of emergency calling and response.

IV.   **Planning Future Paths**

One of the Hatfield Report's preliminary comments repeated above is that the existing wireline E911 infrastructure is, in the author's words, "generally reliable" but "seriously

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[18] We recognize that recent LEC 9-1-1 tariffs include the costs of switch and data base upgrades contracted to third parties. We intend to look carefully at such vendor charges to LECs in the course of the individual state tariff reviews.

antiquated." We would perhaps not put so much stress on the "but," while acknowledging that the future is coming down on 9-1-1 like a powerful locomotive. NENA's answer, which has the support and active participation of APCO and NASNA, is a "Future Path Plan" about which more is said below.

Our hesitation to put too much emphasis on the antiquated state of the wire network relates to its combination of acknowledged reliability and "affordability" -- a characteristic that the Hatfield Report implicitly values when it discusses generally the lack of PSAP funding. We should not, for example, think of Central Automatic Message Accounting ("CAMA") with its 8-digit data limitations as having been foisted on 9-1-1. It was chosen because it did not need to be invented to support 9-1-1 needs at the time. It was extant, cost-effective and pre-dated (1975) the personal communications service explosion of the latter part of the 20th century.[19]

As for SS7, mentioned frequently in the Hatfield Report, it was not specifically designed for 9-1-1 but was created as a call set-up method rather than a data transport method. Nevertheless, it too has been put to good -- if ultimately transitory -- use in emergency calling. SS7 can be accepted by the majority of today's selective routing tandems or switches and is the preferred means of the moment for connecting wireless Mobile Switching Centers ("MSCs") to the routers. NENA has issued a Technical Information Document providing implementation support to wire and wireless carriers.[20]

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[19] While we do not endorse the indefinite survival of "kluges," (Report, 14) we are grateful for their temporary usefulness and affordability.

[20] NENA Technical Information Document 05-501, "SS7 Guidelines for MSC to Selective Router Connectivity,"http://www.nena9-1-1.org/9-1-1TechStandards/tech_info_docs.htm.

Signaling System 7 is, at this time, a primary means for achieving the first of the steps in

NENA's Future Path Plan (FPP): Provide essential data with the voice call.[21] A vision of the

ways in which the existing wireline network might be transformed is contained in slides 21 and

22 of the FPP description, attached hereto as Exhibit C. Critical to such formulations is

imagining other ways, beyond wire or wireless telephony, that 9-1-1 calls might be delivered in

the future. Such is the work of NENA's Technical Committee on non-traditional

communications, which has produced recently a forecast of what might be in store for 9-1-1.[22]

One of the prospects that we have held out in previous comments to the FCC is the use of 9-1-1

as an "NXX" for the integrated national routing of emergency calls. This is among the topics

under FPP discussion.

To imagine the future is difficult enough, but equally or more challenging is putting new

methods into effective operation through the work of standards-setting bodies. Also critical is

the measurement of new system results -- particularly, at this time, wireless caller location[23] --

for compliance with criteria of accuracy and reliability. Both of these broad topics were the

proper subject of extended discussion in the Hatfield Report.

The work of two long-recognized standards bodies, TIA and ANSI, in defining

commonly acceptable methods for Phase I and Phase II of wireless E9-1-1, has been valuable

and should continue at the will of the industry and public safety participants. Prominently

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[21] A brief description of FPP is attached as Exhibit B. A slide presentation of the plan may be accessed at http://www.nena9-1-1.org/9-1-1TechStandards/future_path_plan.htm.

[22] NENA Technical Information Document 07-501, "E9-1-1 and Emerging Technologies," September 11, 2002, accessible at http://www.nena9-1-1.org/911TechStandards/ tech_info_docs.htm.

[23] NENA's alliance with RCC Consultants to test Phase II accuracy is described at http://www.nena9-1-1.org/PR_Publications/nena_press_releases.htm

mentioned in the Report as a newcomer on the standards scene is ESIF, co-convened by ATIS and NENA and involving APCO and NASNA representatives as well. Among the pertinent ESIF issues currently under study are:

> No. 10 -- "Establishment of a Homeland Security liaison officer between wireline and wireless carriers and essential service agencies."
> No. 11 -- "Phase 2 location reliability factor."
> No. 12 -- "PSAP documentation to satisfy Richardson Order verification requirement."
> No. 18 -- "Technical definition of FCC cost demarcation."[24]

When the wireless enhanced 9-1-1 rules were first adopted, so-called network location solutions were thought to be the sole option. Later, the Commission faced the difficult choice of whether to amend the regulations to accommodate wireless handsets containing location-determining intelligence. The difficult choices remain in our dynamic, restless telecommunications environment, as well-expressed by the Hatfield Report (40): "[T]o prioritize the future evolution of wireline and wireless E911 in such a way that short term and long term priorities are properly balanced."

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Respectfully submitted,

NENA, APCO AND NASNA
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[24] No. 18 is an elaboration of the King County orders for application to diverse facts. All ESIF current issues are described in a link at www.atis.org.

NENA SWAT
"Strategic Wireless Action Teams"

BACKGROUND

For over 30 years the three numbers "9-1-1" have represented the call for help, the first line of defense, and a lifeline to critical emergency services. Sprouting from a handful of communities in the late 1960's to near ubiquity today, "9-1-1" is THE institution for citizen activated emergency response.

Nurtured since its inception as a cooperative public/private partnership, 9-1-1 capabilities, needs and perceptions have grown exponentially in the last four decades. From a simple rotary phone call to the provision of geo-located crash data, the 9-1-1 community is increasingly asked, and needed – to do it all.

Understanding that role in today's world, the National Emergency Number Association (NENA) and its members are poised to advance 9-1-1 like never before. Aiming to achieve the goal of one nation – one number, NENA is charting a course for the development and deployment of 21st Century 9-1-1 technologies, systems and policies.

WHY NENA SWAT?

Seeking to positively influence the role 9-1-1 plays in all communications, SWAT is organized to create a consensus-building process with a mission to: (1) Complete a national E9-1-1 infrastructure (2) Provide technical implementation and support teams for deployments (3) Provide legislative and regulatory guidance and expertise (4) Help facilitate state and federal policy education (5) Advance PSAP readiness evaluation capabilities and structures.

In supporting this mission, SWAT will strengthen the level of involvement and strategic planning for citizen activated emergency response systems, creating documents and strategies for E9-1-1 activities. In doing so, SWAT will elevate and advance the issues of 9-1-1, with policy makers, government and the private sector; crafting and implementing long term agendas and actions that strengthen both the public and private sectors ability to better respond and communicate in times of emergencies.

In addition to providing national guidance, SWAT will be deployed in specific states, regions or localities that are in special need of NENA expertise, visioning and planning. Once deployed, SWAT will provide appropriate outreach, communications and review capabilities to relevant parties, communities and stakeholders.

SWAT TEAMS

Mobilizing some of the 9-1-1 community's brightest professionals, the effort will provide an unprecedented level of support to localities, regions, states and nations in the pursuit of one nation – one number.

This support will come in the form of teams organized around NENA expertise and planning:

Lead Team:

Comprised of the NENA Executive Board and staff personnel, this team will coordinate SWAT activities to best utilize the NENA organization and expertise. This team will incorporate and allocate the many talents and attributes of the "Resource and Review Team" to specific activities and projects.

Individual Board members will chair and facilitate subteam SWAT efforts and topics under the following:

1. Technical SWAT
   Anchored by a handful of NENA's technical experts and committee members, this team will provide the necessary technical requirements, strategies and capabilities needed to achieve ubiquitous 9-1-1 service. Specific short term activities will include an audit of Selective Routers, ALI database capabilities, national internetworking capabilities and cost savings analyses, and definition of specific plans to complete E9-1-1 nationally. This will be done with consideration of the NENA Future Path Plan and objectives for critical 9-1-1 technologies, systems and architecture.

2. Operations SWAT
   Supported by a handful of NENA's 9-1-1 operations experts and committee members, this team will provide strategic vision and guidance on critical 9-1-1 operations issues involved with SWAT objectives and actions. The Operations SWAT will develop outreach materials for PSAPs, define operational changes within a PSAP; update relevant procedure changes with the deployment of new E9-1-1 systems; and provide additional explanations to PSAPs when needed. Specific operations short term activities include an evaluation of PSAP readiness, defining processes to achieve readiness and implementing operations standards for readiness.

3. Policy SWAT
   Organized using a number of NENA's public policy experts, this team will provide strategic vision and guidance on 9-1-1 public affairs. The Policy SWAT will define issues, organize policy makers and educate the public about 9-1-1 capabilities and needs. The Policy SWAT will advocate and seek a positive regulatory and legislative environment to deploy ubiquitous 9-1-1 systems and solutions. Where appropriate, the Policy SWAT will form coalitions to advocate and advance 9-1-1 specific issues. Specific short term activities include an evaluation of Federal and State 9-1-1 policies and regulations and an evaluation of 9-1-1 political climate.

4. Finance SWAT

   Comprised of public policy experts, economist and leaders from the private sector, the Finance SWAT will provide analysis and vision in developing a long term finance strategy for 9-1-1. Identifying the economic impact of such a strategy, the Finance SWAT will apply methods, models and sources for recommending sustainable 9-1-1 funding to policy makers.

Resource and Review Team

In addition to the four subteams, NENA will call on its current committees, chapter and past presidents, along with ad hoc volunteers to provide additional input to SWAT activity; crosscheck assumptions and administer local perspectives. The Resource and Review Team will be depended upon greatly by the Lead Team and respective subteams.

9-1-1's Technical Future:
The NENA 9-1-1 Future Path Plan

In meeting the NENA mission, NENA's technical process must make sure two things happen—that we deal effectively with the new challenges in bringing 9-1-1 services to all callers, and that we retain appropriate previous capabilities and reliability.

Integrating a growing variety of non-traditional ways to access 9-1-1 (such as telematics) by adding components and functions to the overall 9-1-1 system is advisable only if the proposed method is clearly more effective, more dependable, and/or more economical than what we have, or than other alternatives. A technical plan for future 9-1-1 systems needs to provide a long-term direction for development to support new call sources and needs.

To date, E9-1-1 service has been intentionally designed with certain characteristics. Examples are carefully designed alternate routes as backups if the primary route fails, circuit path diversity, redundancy of critical components (such as PSAP datalinks and duplicated data bases), call congestion control, etc. Also, service parity is a basic objective—every potential 9-1-1 caller should have the same likelihood of a successful 9-1-1 call connection, regardless of the source of the call, whether from an ILEC, a CLEC, an ISP, or a wireless carrier. The P.01 service standard is an example.

The Future Path concept is an approach meant to reintroduce and refocus attention on these issues. We should not lose what has been gained due to speed of effort, or due to lack of knowledge of past practices and standards on the part of newer parties to the 9-1-1 process. Good design, standards and guidelines are needed to support this. And we need to aggressively manage the technical evolution of the overall 9-1-1 system and emergency communications process in ways that meet the basic criteria, and serve local and national emergency needs. Accomplishing this involves the development of specific concepts defining the nature of future E9-1-1 service and systems, what objectives need to be met, and what basic criteria need to be used to test the validity of proposed solutions. This must be done based on service needs, functions, and features identified in conjunction with public safety operations perspectives. An example of this is the proposal of a three tiered data delivery process that you will see in the Future Path Plan PowerPoint, and the concept that the minimal data needed by the calltaker to react to the emergency call should be transported along with the call itself.

Your comments and input are strongly and sincerely invited! Active review and discussion is key to evolving the Plan, and making it, and the technical development process, all it can and should be. Send your thoughts to: NENApathplan@nena.org

NENA's Future Path Plan Criteria for Technical Evolution

Definition/Requirement: In present and future applications of all technologies used for 9-1-1 call and data delivery, maintain the same level or improve on the reliability and service characteristics inherent in present 9-1-1 system design.

New methods or solutions for current and future service needs and options should meet the criteria below. This inherently requires knowledge of current 9-1-1 system design factors and concepts, in order to evaluate new proposed methods or solutions against the Path Plan criteria. NENA stands ready to assist and evaluate these efforts.

Criteria to meet the Definition/Requirement:

   * Reliability/dependability as governed by NENA's technical standards, and other generally accepted base characteristics of E9-1-1 service

   * Service parity for all potential 9-1-1 callers

   * Least complicated system design that results in fewest components to achieve needs (simplicity, maintainable)

   * Maximum probabilities for call and data delivery with least cost approach

   * Documented procedures, practices, and processes to ensure adequate implementation and ongoing maintenance for 9-1-1 systems

This basic technical policy is a guideline to focus technical development work on maintaining fundamental characteristics of E9-1-1 service by anyone providing equipment, software, or services.

Future development of the technical path plans is the responsibility of the Technical Committee lead group (Roger Hixson, Billy Ragsdale, Barb Thornburg, Tom Breen, Tony Busam, Tom Hinkleman, Bob Tilden), with the support of Technical Committee members. Each NENA Technical Committee will apply the Path Plan Criteria to any and all development efforts. The NENA Executive Board will pursue ways to obtain the funding and exposure necessary to develop and implement the concepts and requirements prescribed by the NENA 9-1-1 Center Operations and the NENA Technical Committees, as well as obtaining the regulatory and legal support needed by those involved in providing E9-1-1 services to deliver it.

Following are some thoughts that further explain the 9-1-1 Future Path Plan.

When the end of the technical path process is completed, what new ideas and tools would we expect to have in place?

An expansion of the Path Plan Criteria to specify technical and operational characteristics needed to meet or exceed the Requirements and Criteria in each major element of a future 9-1-1 system and service process. This would frame development by vendors of a robust architecture that uses industry standard protocols to carry E9-1-1 calls and the necessary related data to PSAPs, and the capability to share that data with others involved in delivering emergency care, such as trauma centers, NORAD, the US Coast Guard, etc. This architecture will allow PSAPs to receive calls from almost any originating location, and it will also allow them to transfer the call to any

required location along with either the data , or a "key," that the destination location can use to retrieve the data. This architecture could use one or more forms of private network or internet protocol to carry data, as well as other standard network protocols such as ISUP, TCAP, etc.
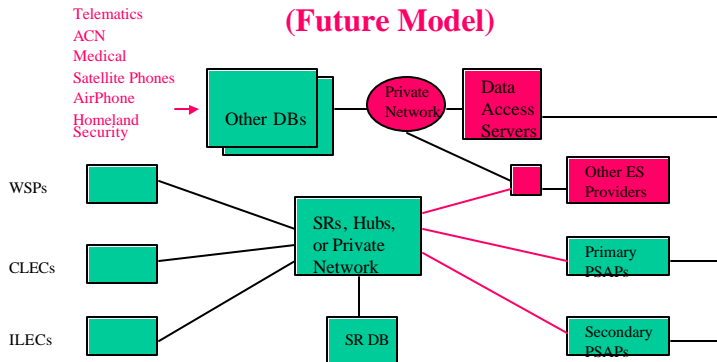
<u>Why do we need a technical path for 9-1-1?</u>

That's easy. Look at all the future technologies that we can already see coming down the pipe in relation to an E9-1-1 call. Picture the cost and confusion and implementation delays involved if everyone has their own technological solution. We're already experiencing that. A well thought out and clearly defined path will allow all members of the puzzle to build toward a common architecture that will deliver the most bang for the public safety buck.

Roger Hixson
NENA Technical Issues Director

Updated: 10/22/2002 10:39:10 AM -0400

Exhibit C

Evolution of E 9-1-1 & Emergency Telecommunications
(Future Model)

Telematics
ACN
Medical
Satellite Phones
AirPhone
Homeland
Security

Other DBs

Private Network

Data Access Servers

WSPs

CLECs

ILECs

SRs, Hubs, or Private Network

SR DB

Other ES Providers

Primary PSAPs

Secondary PSAPs

- Provision of data routers <u>for access</u> to distributed DBs
  - at user location, at serving end office, at ALI server location? Others?
  - via One Stop Gateway `trusted host' network?
  - How many options? A mixture? Security issues? Cost impact?

1

Exhibit C
Future Path Plan Summary
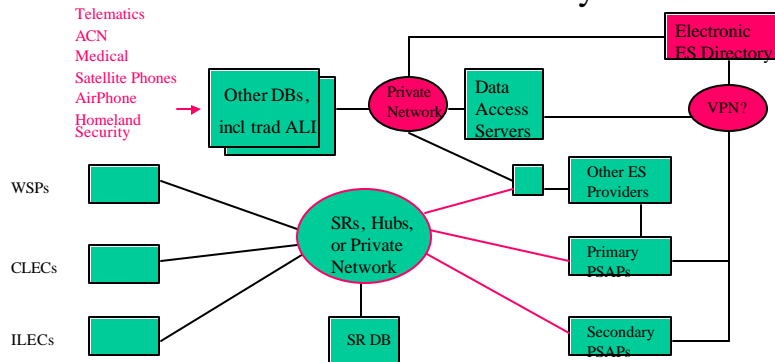
- Call delivery via non-switched methods
- Take the entire data network to secure private network for economics
- Data network based intercommunications
  - Relationship with GETS and other federal plans?

2